CLAIMS

What is claimed is:

1. An artificial synovial fluid, comprising a serum, a chelating agent, and a buffer in an aqueous solution.

2. The artificial synovial fluid of claim 1 wherein the serum comprises bovine calf serum.

3. The artificial synovial fluid of claim 1 further comprising an antibiotic.

4. The artificial synovial fluid of claim 3 wherein the antibiotic comprises sodium azide.

5. The artificial synovial fluid of claim 3 wherein the antibiotic comprises Patricin A.

6. The artificial synovial fluid of Claim 1 wherein the chelating agent is chosen from the group comprising Ethylene-Diamine-Tetra-Acetate (EDTA), disodium EDTA, tetra sodium EDTA, and Ethylene Glycol bis (2-Aminoethyl Ether)-N,N,N′,N′-Tetraacetic Acid (EGTA).

7. An artificial synovial fluid, consisting essentially of:

25% to 99.8% bovine calf serum, wherein the bovine calf serum has a protein content of 50 g/l to 60 g/l;

0.01 % to 3% Ethylene-Diamine-Tetra-Acetate; and

up to 72.0% deionized water,

wherein the percentages of components are weight to weight of the fluid composition.

8. The artificial synovial fluid of claim 7 wherein the artificial synovial fluid has 33% to 66% serum and 0.01% to 0.74% of EDTA.

9. An artificial synovial fluid, consisting essentially of:

25% to 99.8% bovine calf serum, wherein the bovine calf serum has a protein content of 50 g/l to 60 g/l;

0.1% to 5.0% Sodium Azide;

0.01 % to 3% Ethylene-Diamine-Tetra-Acetate; and

up to 72.0% deionized water,

wherein the percentages of components are weight to weight of the fluid composition.

10. The artificial synovial fluid of claim 9 wherein the artificial synovial fluid has 33% to 66% serum and 0.01% to 0.74% of EDTA.

11. An artificial synovial fluid, consisting essentially of:

25% to 99.8% bovine calf serum, wherein the bovine calf serum has a protein content of 50 g/l to 60 g/l;

0.1 % to 5.0% Patricin A;

0.01 % to 3% Ethylene-Diamine-Tetra-Acetate; and

up to 72.0% deionized water,

wherein the percentages of components are weight to weight of the fluid composition.

12. The artificial synovial fluid of claim 9 wherein the artificial synovial fluid has 33% to 66% serum and 0.01% to 0.74% of EDTA.

13. An artificial synovial fluid, consisting essentially of:

25% to 99.8% bovine calf serum, wherein the bovine calf serum has a protein content of 50 g/l to 60 g/l;

0.1 % to 5.0% Patricin A;

0.01 % to 3% Ethylene-Diamine-Tetra-Acetate; and

up to 72.0% saline,

wherein the percentages of components are weight to weight of the fluid composition.

14. The artificial synovial fluid of claim 13 wherein the artificial synovial fluid has 33% to 66% serum and 0.01% to 0.74% of EDTA.

15. The artificial synovial fluid of claim 13 wherein the saline is phosphate buffered saline.

16. An artificial synovial fluid, consisting essentially of:

25% to 99.8% bovine calf serum, wherein the bovine calf serum has a protein content of 50 g/l to 60 g/l;

1% to 30% Tris,

0.01 % to 3% Ethylene-Diamine-Tetra-Acetate; and

up to 72.0% saline,

wherein the percentages of components are weight to weight of the fluid composition.

17. The artificial synovial fluid of claim 16 wherein the saline is phosphate buffered saline.

18. The artificial synovial fluid of claim 17 wherein the artificial synovial fluid has 33% to 66% serum, 1% to 5% Tris, and 0.01% to 0.74% of EDTA.

19. A method of using the artificial synovial fluid of claim 1 comprising adding the artificial synovial fluid to an implant during an *in vitro* evaluation of implant performance.

20. The method of claim 19 wherein the implant is a prosthetic joint.

21. The method of claim 19 wherein the evaluation of implant performance is a wear test.

22. A method of making the artificial synovial fluid of claim 1 comprising preheating the serum to 37°C, adding the serum, chelating agent, buffer and aqueous solution according to a desired ratio, mixing the fluid and filtering the fluid.

23. The artificial synovial fluid of claim 1 further comprising an implant.

24. The artificial synovial fluid of claim 23 wherein the implant is a prosthetic joint.

25. A method of using the artificial synovial fluid of claim 7 comprising adding the artificial synovial fluid to an implant during an *in vitro* evaluation of implant performance.

26. A method of using the artificial synovial fluid of claim 9 comprising adding the artificial synovial fluid to an implant during an *in vitro* evaluation of implant performance.

27. A method of using the artificial synovial fluid of claim 11 comprising adding the artificial synovial fluid to an implant during an *in vitro* evaluation of implant performance.

28. A method of using the artificial synovial fluid of claim 13 comprising adding the artificial synovial fluid to an implant during an *in vitro* evaluation of implant performance.

29. A method of using the artificial synovial fluid of claim 16 comprising adding the artificial synovial fluid to an implant during an *in vitro* evaluation of implant performance.